

# United States Patent [19]

Dattagupta et al.

[11] Patent Number: 4,724,202

[45] Date of Patent: Feb. 9, 1988

[54] USE OF NON-HYBRIDIZABLE NUCLEIC ACIDS FOR THE DETECTION OF NUCLEIC ACID HYBRIDIZATION

[75] Inventors: Nanibhushan Dattagupta, New Haven; Peter M. M. Rae; William J. Knowles, both of Hamden; Donald M. Crothers, Northford, all of Conn.

[73] Assignee: Molecular Diagnostics, Inc.

[21] Appl. No.: 560,462

[22] Filed: Dec. 12, 1983

[51] Int. CL<sup>4</sup> ..... C12Q 1/68; G01N 33/53; G01N 33/543

[52] U.S. CL. .... 435/6; 935/78; 436/811; 436/518; 435/7

[58] Field of Search ..... 436/508, 808, 501, 504; 435/6, 7; 935/76, 77, 78

[56] References Cited

## U.S. PATENT DOCUMENTS

4,358,535 11/1982 Falkow et al. .... 435/6  
4,395,486 7/1983 Wilson et al. .... 436/508  
4,556,643 12/1985 Paau et al. .... 436/501  
4,563,417 1/1986 Albarella et al. .... 435/6  
4,582,789 4/1986 Sheidon et al. .... 435/6

## FOREIGN PATENT DOCUMENTS

4200 3/1984 Australia  
7500 10/1984 Australia  
40310 10/1985 Australia  
0079139 5/1983 European Pat. Off.  
0097373 1/1984 European Pat. Off.

2125964 3/1984 United Kingdom

## OTHER PUBLICATIONS

Piette, et al., *Proc. Natl. Acad. Sci., USA*, vol. 80, pp. 5540-5544, Sep. (1983).  
Weber, et al., *The Operon*, Reznikoff (ed.), Cold Spring Harbor Laboratory, 1980, pp. 155-175.  
Salzman, et al., *J. of Virology*, Jun. 1979, vol. 30, No. 3, pp. 946-950.  
Higuchi, et al., *Proc. Natl. Acad. Sci., USA*, vol. 73, No. 9, pp. 3146-3150, Sep. (1976).  
Annual Review of Biophysics and Bioengineering, vol. 10, 1981, "The Interaction of Intercalating Drugs with Nucleic Acids", Helen M. Berman and Peter R. Young, pp. 87-114.  
Accounts of Chemical Research, vol. 11, 1978, "Platinum Complexes: Probes of Polynucleotide Structure and Antitumor Drugs", Stephen J. Lippard, pp. 211-217.

Primary Examiner—Christine M. Nucker

Assistant Examiner—Stephen C. Wieder

Attorney, Agent, or Firm—Sprung Horn Kramer & Woods

[57]

## ABSTRACT

A detection probe comprising a hybridizable single stranded portion of nucleic acid connected with a non-hybridizable, single or double stranded nucleic acid portion, the non-hybridizable portion preferably including a recognition site for a particular protein.

51 Claims, 1 Drawing Figure

